

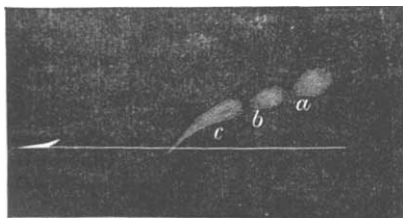
regard this specimen merely as a "sport" or *lusus naturæ*, possessed rather of a pathological than of a strictly anthropological interest. Certainly isolated cases of hairy persons, and even of hairy families, are not unknown to science. Several were figured in a recent number of the Berlin *Zeitschrift für Ethnologie*, and, if I remember, both Crawford ("Journal of an Embassy to Ava") and Col. Yule ("Mission to the Court of Ava") speak of a hairy family resident for two or three generations at the Burmese capital. This family is reported to have come originally from the interior of the Lao country, and in the same region we are now told that little Krao and her parents, also hairy people, were found last year by the well-known eastern explorer, Mr. Carl Bock. Soon after their capture, the father appears to have died of cholera, while the mother was detained at Bangkok by the Siamese Government, so that Krao alone could be brought to England. But before his death a photograph of the father was taken by Mr. Bock, who describes him as "completely covered with a thick hairy coat, exactly like that of the anthropoid apes. On his face not only had he a heavy, bushy beard and whiskers, similar in every respect to the hairy family at the court of the King of Burmah, who also came from the same region as that in which Krao and her father were found; but every part was thoroughly enveloped in hair. The long arms and the rounded stomach also proclaimed his close alliance to the monkey-form, while his power of speech and his intelligence were so far developed that before his death he was able to utter a few words in Malay."

Assuming the accuracy of these statements, and of this description, little Krao, of course, at once acquires exceptional scientific importance. She would at all events be a living proof of the presence of a hairy race in Further India, a region at present mainly occupied by almost hairless Mongoloid peoples. From these races the large straight eyes would also detach the Krao type, and point to a possible connection with the hairy, straight-eyed Aino tribes still surviving in Yesso and Sakhalin, and formerly widely diffused over Japan and the opposite mainland.¹

A. H. KEANE

FIGURE OF THE NUCLEUS OF THE BRIGHT COMET OF 1882 (GOULD)²

ALTHOUGH this comet presented a beautiful spectacle, when seen with the naked eye, I have been disappointed at the small amount of work which I have been able to do in the way of accurate observation. I give herewith the only two good sketches which I have been able to make. The aperture employed was 15 inches, and the power was 145 diameters.



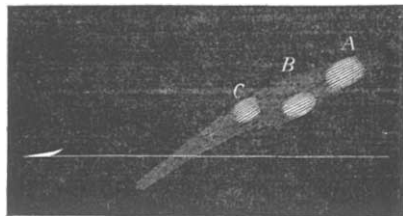
1882, October 13.

1882, October 13.—(See the figure.) The nucleus is curved as in the drawing. It consists of three masses. I am sure of a break at *a*; tolerably sure of the break at *b*, and I suspect a break at *c*, but I am not certain of it.

¹ See my paper on "Aino Ethnology" in *NATURE*, vol. xxvi. p. 524.
² Paper by Prof. Edward S. Holden, in the *American Journal of Science and Arts*.

1882, October 14.—The night is very poor. (In general the appearances of last night are confirmed.) The nucleus is about 1' long.

1882, October 17.—(See the figure.) There are three masses, plainly separated. *B* is farther north than the line *A-C* by 3–4". There is a dark division between each pair of masses. *B* and *C* are nearly in the parallel.



1882, October 17.

The brush of light from the mass *A* toward the east, comes from the south side of *A*, as it is drawn. From the W. end of *A* to the E. end of the brush of light, is about 15".

1882, October 18.—The dark space between *A* and *B* is about 10"; it is as wide as *A* itself, and wider than on October 17. *C* is certainly seen as a separate mass; *A* and *B* are bright and stellar in appearance, more so than on October 17. *C* is, however, fainter than then. The dark axis of the tail extends quite up to the coma.

1882, October 19.—Cloudy. The nucleus is seen as before. *A* and *B* are seen, as also the dark space between them. *C* is not seen, but this is probably on account of the unsteady air.

I regret that my opportunity did not allow me to make any further sketches of value.

Washburn Observatory, University of Wisconsin,
Madison, November 3, 1882

NOTES

THE office of Director of the Geological Survey of Scotland, vacant by the promotion of Mr. Geikie to be Director-General, has been filled up by the appointment of Mr. H. H. Howell, District Surveyor of the Geological Survey of Scotland during the earlier years of its progress, but who since the separation of the Scottish branch of the establishment in 1867, has been continuously employed in England, where he has personally surveyed large tracts of the northern counties, and where for some years past he has had the direct personal supervision of the whole of the field-work in that district. He will not be able to enter fully on his duties in Scotland until the area now under his charge in the north of England has been completely surveyed. The promotion of Mr. Howell having caused a vacancy in the rank of District Surveyor, Mr. W. Whitaker has been appointed to the post. This geologist is well known for his detailed surveys of the Tertiary deposits of the London basin. He is at present engaged in the survey of Norfolk.

THE United States Transit of Venus expedition, under Prof. Newcomb, arrived at Plymouth on Sunday as passengers by the Union Steamship Company's steamer *Moor*, from Cape Town. They report that their observations were made at Wellington, fifty-eight miles from Cape Town, under extremely favourable conditions, two good observations of internal contact and 236 photographs being obtained, of which more than 200 can be measured.

THE annual general meeting of the Association for the Improvement of Geometrical Teaching will be held, through the kindness of the Council, at University College, Gower Street, on Wednesday, the 17th instant, at 11 a.m. In addition to the usual routine business, the president (R. B. Hayward, F.R.S.)

will propose "that the Committee for Elementary Plane Geometry be instructed to publish Part I of the Plane Geometry, and to take such steps as they may deem advisable to secure its recognition as a basis of instruction and examination in geometry." It will be in the recollection of some of our readers that the object of the Association was extended at the last annual meeting, so as to include the effecting of improvements in the teaching of elementary mathematics and mathematical physics. This extension has met with great approval, and the novelty of this year's meeting will be the reading of three papers: (1) "The Teaching of Elementary Mechanics," by W. H. Besant, F.R.S. (2) "The Basis of Statics," by Prof. H. Lamb, of the Adelaide University. (Prof. Lamb is of the opinion that the true and proper basis of statics is to be sought for in the principles of linear and angular momentum). (3) "Notes on the Teachings of Dynamics," by Prof. Minchin. The reading of the papers will be followed by a discussion, in which it is hoped that Prof. G. Carey Foster, F.R.S., Prof. Minchin, and others will take part. The papers will be read at the afternoon meeting which begins at 2 p.m. The two present honorary secretaries will resign office; Mr. Levett, in consequence of the pressing necessity of his other duties, and Mr. Tucker, in consequence of the state of his health, which compels him to withdraw from some of his engagements; both gentlemen, however, hope to remain on the council and act as *amici curiæ* to their successors in office.

THE well-deserved honour of C.I.E. has been conferred upon Surgeon-Major James Edward Tierney Aitchison (Bengal Army), F.L.S., who did such excellent botanical work with Sir Frederick Roberts's force in the Kuram Valley during the Afghan war.

GEOLOGISTS will regret to hear that one of the most promising of the younger members of their number, Mr. E. B. Tawney, of the Woodwardian Museum, Cambridge, died suddenly at Mentone on the 30th ult.

THE death is announced, on December 22 last, of Dr. Carl Hornstein, professor of theoretical and practical astronomy, and director of the observatory in the Carl Ferdinands University, Prag, at the age of fifty-eight years.

THE thirty-sixth annual general meeting of the Institution of Mechanical Engineers will be held on Thursday, January 25, and Friday, January 26, at 25, Great George Street, Westminster. The chair will be taken by the president, Percy G. B. Westmacott, Esq., at half-past seven p.m. on each evening. The following papers will be read and discussed:—Report on the hardening of steel, by Prof. F. A. Abel, C.B., F.R.S., of Woolwich; on the molecular rigidity of tempered steel, by Prof. D. E. Hughes, F.R.S., of London; on the working of blast furnaces, with special reference to the analysis of the escaping gases, by Mr. Charles Cochrane, of Stourbridge, vice-president; on the St. Gothard tunnel, by Herr E. Wendelstein, of Lucerne; on the strength of shafting when exposed both to torsion and end-thrust, by Prof. A. G. Greenhill, of Woolwich.

THE old female Hippopotamus (*Adhela*) presented to the Zoological Society in 1853 by the then Viceroy of Egypt, died in the Gardens on the 16th ult., after having for some time past exhibited manifest signs of old age. Her mate (*Obaysch*) died in 1877, after having lived twenty-seven years in the Gardens. It is thus evident that about thirty years is the extreme limit of Hippopotamine existence, as it is not at all likely (judging from the state of the teeth and bones) that either of these animals would have been able to support existence so long in its native wilds, as under the favourable circumstances in which it lived in the Regent's Park.

DR. BLASIUS of Brunswick has recently shown that the fossil remains of a species of *Souslik*, found in various parts of

Northern Germany, which are usually attributed to *Spermophilus altaicus*, really belong to *S. rufescens*, Keys. et Bl. It is probable that the cave-bones from the Mendip Hills, upon which Dr. Falconer established his *Sp. erythronoides* (Pal. Mem., ii., p. 453), are really of the same species, and that this Rodent, now driven far east into the steppes of Orenburgh (like other members of the Steppe-fauna), formerly extended all over Northern Europe, and even into the British Islands.

RECENTLY, our readers may remember, Miss Baxter of Balgavies, sister of Sir David Baxter, and aunt of the Right Hon. W. E. Baxter, and the late Dr. Baxter, Procurator-Fiscal of Dundee, gave jointly 150,000*l.* for the endowment and erection of a college in Dundee. Buildings have been acquired, professors appointed, and the work of the college will soon be begun. Miss Baxter has just given another 10,000*l.* to provide a laboratory, and the trustees of the late Dr. Baxter also 10,000*l.* to found a Chair of Law.

As the late M. Gambetta was a member of the Society of Dissection, an autopsy of his body was made. The weight of his brain was found to be 1100 grams; M. Mathias Duval, Professor in the Faculty of Medicine, found the structure of the brain to be very fine, and the third convolution, which M. Broca associates with the speechifying faculty, to be remarkably developed.

THE project of the United States for establishing an universal meridian has been sent to the Paris Academy of Sciences for approval. It is expected that Great Britain may object to this measure, and it has been proposed that, in consideration of the services rendered to geography by England, that the Greenwich meridian should be selected as the start-point for time and longitude.

OUR Paris Correspondent writes that the second Paris inundation is developing its ravages with peculiarities which prove that modern engineers do not pay sufficient attention to the effects of their works on the *régime* of the stream they profess to regulate. The level of the Seine is just as high at Charenton as it was in 1876, although it is 20 centimetres less elevated at Pont Royal, where it reaches only 7 metres. The reason of this difference is that an ignorant Municipal Council authorised the building of a bridge which crosses the river obliquely, and a new quay at Bercy, where in some places the dimensions of the bed of the stream have been diminished by not less than 55 metres. If the rains continue it is feared that one of the Paris bridges, the Invalides, will be carried away, which will produce real disaster.

PROF. BÖRNSTEIN, of Berlin, has brought out a small work on meteorology under the title of "Regen oder Sonnenschein." In conjunction with Prof. Landolt he has also nearly completed an important work ("Physikalisch-Chemische Tabellen") containing all the most reliable determination of constants required in chemical and physical work, some of which will be published in a collected form for the first time.

MR. J. P. McEWEN, of Hong Kong, under date November 28, 1882, sends us some observations of the comet, taken on the morning of the 27th:—26d. 15h. 43m. 17s. mean time at place, the distance from Sirius measured by sextant was 34° 32'; 26d. 15h. 50m. 30s. mean time at place, the distance from Procyon was 39° 31'; longitude in time, 7h. 36m. 40s. A line drawn from the small brightest star in the lower part of the sword-scarb of Orion through Sirius almost exactly passed through the nucleus of the comet; the apparent length of the tail was about twice that of Orion's belt. It was getting very indistinct, and on the 27th, owing to the bright moonlight, was more so than if the night had been dark and clear. Mr. McEwen has seen the comet several times, and when at its greatest brilliancy,

stars of the 4th or 5th magnitude could be distinctly seen through the tail. The tail pointed in a direction about midway between Sirius and Procyon. M. Dechevrens, the director of the Zi-ka-Wei Observatory (near Shanghai) has devoted a good deal of attention to this comet, the result of which will directly be published.

Amateur Mechanics is the name of a new illustrated monthly Magazine, conducted by Mr. P. N. Hasluck, and published by Trübner and Co.

WE have received from the U.S. Naval Observatory the results of the observations made to determine the longitude of the observatory of the J. C. Green School of Science, Princeton, N.J. The final result is that the latter is oh. 9m. 34s. 53s east of the central dome of the observatory.

THE earthquake in Panama on November 7 was followed by a violent shock on November 13 at 2.30 a.m. It was observed also at Taboga and Colon. It is remarkable that all the Central American earthquakes since August last have occurred between midnight and daybreak. Their general direction was invariably from north to south, and it is supposed that they proceeded from one and the same cause. The West Indian cable broke, at a point about thirty miles from land, during a violent shock. The centre of the disturbance seems to lie near the West Indian Isles. During the second week of December seven shocks were felt in the Spanish province of Almeria. On December 8 at 10.1 p.m. a fearful shock lasting four seconds was felt at Tecuci (Roumania). Its direction was from south-east to north-west. Another earthquake is reported from Hermagor (Carinthia). It occurred on December 10 at 2 a.m., and was preceded by a terrible thunderstorm.

AN "Illustrirte Bienenzeitung," organ for the propagation of rational apiculture, will be edited by Prof. Adolphson of Zürich, beginning on the 1st inst.

IN the Pelion district a moderately violent earthquake occurred on December 11, but no damage was done. Upon the island of Santorin new volcanic activity has recently been noticed; also in the subterranean volcano which formed near Missolonghi.

THE additions to the Zoological Society's Gardens during the past week include a Himalayan Bear (*Ursus tibetanus*) from Burmah, presented by Capt. Connor; two Bronze Fruit Pigeons (*Carpophaga anea*) from India, presented by Mrs. A. H. Jamrach; four Barred-shouldered Doves (*Geopelia humeralis*) from Australia, presented by Mr. Ernest L. Bentley; a Lesser Sulphur-crested Cockatoo (*Cacatua sulphurea*) from Moluccas, presented by Mr. K. Digby; a Gannet (*Sula bassana*), British, presented by Mr. Thomas Keen; a Cape Bucephalus (*Bucephalus capensis*) from South Africa, presented by Mr. H. Pillans; a White-fronted Lemur (*Lemur albifrons* ♀) from Madagascar, four Wood Thrushes (*Turdus mustelinus*), a Golden-winged Woodpecker (*Colaptes auratus*) from North America, two Cirl Buntings (*Emberiza cirilis*), two Crested Grebes (*Podiceps cristatus*), a Razorbill (*Alca torda*), a Bar-tailed Godwit (*Limosa lapponica*), a Red-throated Diver (*Colymbus septentrionalis*), British, purchased.

OUR ASTRONOMICAL COLUMN

THE TOTAL SOLAR ECLIPSE ON MAY 6.—The right ascensions and declinations of the moon for 1883, both in the *Nautical Almanac* and the *American Ephemeris*, depend upon Hansen's Tables, with the recent corrections of Prof. Newcomb. They furnish as accurate positions as are obtainable from existing tabular data, and it will be of interest to trace their bearing upon the circumstances of the total eclipse of the sun which crosses the Pacific on May 6. On laying down the belt of totality upon the Admiralty chart of this ocean, it appears that the following islands are included within it, viz.:—Rance, Buffon, Beveridge,

Flint, Caroline, and Chanel Island (in the Marquesas); the positions read off from the general chart or for Flint, Caroline, and Chanel Island, from the enlarged Admiralty charts are as follow:—

Rance Island,	Long. 176° 22' West.	Lat. 24° 20' South.
Buffon "	" 170 0 "	" 20 39 "
Beveridge, "	" 167 50 "	" 20 0 "
Flint "	" 151 50 "	" 11 25 "
Caroline "	" 150 6 "	" 9 54 "
Chanel "	" 140 31 "	" 7 55 "

From direct calculation for each of these points the following local mean times of beginning of totality, the duration of the same, and the sun's approximate altitude at the time, result:—

	Totality begins			Duration.	Sun's	
	May 6.				Altitude.	
	h.	m.	s.	m. s.		
Rance Island,	8	47	36 a.m.	3 27	...	29
Buffon "	9	22	18 "	4 20	...	38
Beveridge, "	9	34	48 "	4 1	...	41
Flint "	11	19	43 "	5 26	...	61
Caroline "	11	33	4 "	5 7	...	63
Chanel "	0	43	32 p.m.	1 47	...	63

It should be mentioned that the semi-diameter of the sun has been taken from the *Nautical Almanac*; that of the moon was obtained from her horizontal parallax, using the factor 0.2725. The duration of totality at Sohag in Egypt in the eclipse of last May was exactly given by this arrangement.

THE MINOR PLANETS.—The part of the *Berliner Astronomisches Jahrbuch* for 1885, containing ephemerides of the minor planets for 1883, has been issued to the various observatories in advance of the publication of the annual volume. It contains approximate places for every twentieth day of 224 of these bodies, the latest being No. 225, with accurately calculated opposition ephemerides of 43, each extending over about five weeks; this division of the *Jahrbuch* occupies upwards of one hundred pages.

There are six cases during the year where the planets approach the earth about opposition, within her mean distance from the sun. On June 22 *Phœbe* is at a distance of 0.93, declination +16°; on July 12 the distance of *Clio* is 0.96, declination -35½°; on August 1 that of *Isis* is 0.90, declination -28°; on October 1 that of *Polyhymnia* is 0.98, declination +8½°; on October 20 that of *Virginia* is 0.98, declination +13°, and on December 11 *Flora* in perigee is at a distance of 0.97, with declination +18°. Galle's method of determining the solar parallax, so strongly advocated and ably applied by Mr. Gill, is not likely to fail for want of opportunities of applying it. As regards the magnitude near opposition we have in the case of *Phœbe* 9.0; *Clio*, 10.2; *Isis*, 8.8; *Polyhymnia*, 9.7; *Virginia*, 9.9; and *Flora*, 8.2.

During the year 1883 four of these planets descend below 14m., from coming into opposition not far from aphelion.

COMET 1882 c.—Mr. Gill has secured five complete observations of this comet (discovered by Mr. Barnard in September) on the meridian S.P., with the transit-circle at the Cape of Good Hope, between November 11 and 30, so that places for upwards of a fortnight after the perihelion passage will be available for calculation.

THE EDUCATION OF OUR INDUSTRIAL CLASSES¹

IT is, I believe, according to precedent, now that another year's work of the Science Classes here has been crowned by the award of prizes, that I should address you on some topic allied to the matters which have brought us together to-night. I need not search long for a subject, for the scientific education of those engaged in our national industries—upon the success or failure of which, in the struggle for existence, the welfare of our country so largely depends—is now one of the questions of the day. I propose, therefore, to lay before you some facts and figures bearing upon the education of our industrial classes, and I shall attempt to make what I have to say on that special point clearer, by touching upon some preliminary matters, which will show how it is that such a question as this has not been settled long ago; and further, that we can, if we wish, settle it now in

¹ An address delivered in presenting the prizes at the Coventry Science Classes, by J. Norman Lockyer, F.R.S.